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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,734

04/16/2004

Frank-Michael Morgenweck

81768/LPK

1353

7590

07/05/2006

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EXAMINER

BEATTY, ROBERT B

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/826,734

Applicant(s)

MORGENWECK ET AL.

Examiner

Robert Beatty

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2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 14-56 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1. Claims 10-11,34-35 are objected to because of the following informalities:  
  
in claims 10 and 11, delete "or adulteration";  
  
in claims 34-35, the claim from which they depend (claim 30) does not necessarily claim more than one resonator which makes these claims unclear.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6,14,24-29,42 are rejected under 35 U.S.C. 102(b) as being anticipated by Liu et al.

Liu et al. teach a color image forming apparatus (col.17, lines1-9) comprising a developing device containing a supply of liquid developer 11 (liquid carrier and toner), a liquid developer applicator 12 (transfer device) for coating a roller 14 with the liquid developer (i.e. transferring the developing liquid to the roller 14), heating the liquid developer with a microwave heater 15 for removing the liquid carrier from the liquid developer ( col. 7, lines 16-24), forming an image by transferring some of the compacted developer layer to a roller 114 leaving behind a desired image, and transferring again the concentrated liquid developer layer to a printing medium 175. Since there are at least two transfer steps, the microwave heater can

be said to act on the developer layer after transfer and before transfer. A fixing device is located along the path of the printing medium for heating and fixing the developed image to the printing medium (col.8, lines 1-6).

3. Claims 1, 5-7,24,28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Bartscher et al.

Bartscher et al. teach an image forming apparatus comprising forming images using liquid developer (paragraph 5) by forming an liquid developer image on a printing medium and conveying it to a fixing device wherein the fixing device comprises a microwave resonator. The liquid in the developed image will be heated (and evaporated).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. or Bartscher et al. in view of Wotton et al.

Liu et al. or Bartscher et al. taught supra discloses most of what is claimed except the liquid developer including an additive having a high absorption for

microwaves. Wotton et al. teach an image forming apparatus using a liquid developer wherein the liquid developer has an additive which has a high absorption for microwaves (col. 2, lines 22-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an additive with a high absorption of microwaves because faster drying can be achieved as taught in Wotton et al.

5. Claims 15-23, 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. or Bartscher et al. in view of Behnke et al. (2003/0013034).

Liu et al. or Bartscher et al. taught supra discloses most of what is claimed except 1) controlling at least one physical parameter of the irradiation with microwaves wherein the parameter is correlated with the energy input into the printing medium and specific embodiments of this controlling feature, 2) using more than one resonator and the details related to more than one resonator, and 3) a scatter reduction mechanism. Behnke teach an image forming apparatus using a microwave heater to heat a developed toner image. As described, for example, in claims 5-16, Behnke et al. teach applicant's control over a parameter related to the energy input and the details thereof. As described, for example, in claims 17-25, Behnke et al. uses more than one resonator. As described in claims 27-28, a radiation scatter prevention means is used. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to use this type of control with a microwave heater because the microwave energy can be adapted to actual real-time measurements (paragraph 11 - 12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use more than one resonator because the microwave energy will be distributed evenly over the print sheet (paragraphs 15-16). Finally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce radiation scatter for safety concerns.

6. Claims 45-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. or Bartscher et al. in view of Behnke et al. (US 6,683,287).

Liu et al. or Bartscher et al. taught supra discloses most of what is claimed except offsetting the resonators and specific positions depending on the wavelength. Behnke teach an image forming apparatus using a microwave heater with a plurality of resonators to heat a developed toner image. As described, for example, in claims 1-10, Behnke et al. teach offsetting of resonators dependent on wavelength wherein the resonators are 90 from the paper path. It would have been obvious to one of ordinary skill in the art at the time the invention was made to offset a plurality of resonators for a microwave heating device because uniform temperature distribution can be ensured.

7. Claims 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Behnke et al. '598, Takahashi et al., Isganitis et al., Carrish, Rezanka, and JP'856 all teach various microwave heaters.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray, can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR

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only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Robert Beatty", with a long horizontal stroke extending to the right.

Robert Beatty  
Primary Examiner  
Art Unit 2852

June 26, 2006